Tessella Project Number: 7567

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Client: STFC (Via SoftCat)

Mantid 2013

Quality Plan



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References

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| Tender response to SoftCat | [TR] | 05-Dec-2012 | <https://github.com/mantidproject/documents/blob/master/Project%20Management/Collaborations/Tessella/Mantid%202013/Bidders%20Response%20v1m0r3.doc?raw=true> |
| Stakeholder Map | [StkMap] | 03-Dec-2012 | <https://github.com/mantidproject/documents/blob/master/Project%20Management/Collaborations/Tessella/Mantid%202013/Stakeholder%20Map.doc?raw=true> |
| Risk Register | [RR] |  | <https://github.com/mantidproject/documents/blob/master/Project%20Management/RiskRegister.xls?raw=true> |
| Development Plan | [DevPlan] | 03-Dec-2012 | <https://github.com/mantidproject/documents/blob/master/Project%20Management/Collaborations/Tessella/Mantid%202013/Development%20Plan%20DRAFT.doc?raw=true> |
| Test Plan | [TestPlan] | 30-Oct-2011 | https://github.com/mantidproject/documents/blob/master/Testing/Mantid%20System%20Test%20Plan.doc?raw=true |

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# Project Charter

## Project Description and High Level Requirements

This is a Customer managed Time & Materials Software development project to continue and further develop the Mantid project.

**What Does STFC Need?**

The STFC ISIS facility requires an IT company with expertise in large scale C++ projects for scientific institutions, to assist with the development of Mantid (Manipulation and Analysis Toolkit for ISIS Data) – a new software project that will provide scientists and users with next-generation tools for the processing and analysis of data collected on the neutron instruments of the ISIS facility. Help will be needed with requirements development, architecture design, implementation and on-going support. The work will be carried out in partnership with internal IT support.

**What Will Tessella Do?**

Tessella will supply scientifically trained software engineers to work on site at the ISIS facility. We will supply a project manager and a team of three core staff, with additional software development support as needed. Our Project Manager will lead the ISIS and Tessella team in ensuring that Mantid meets STFC’s needs for many years to come, while our Technical Lead and other development staff will be responsible for the software implementation of ISIS.

**Why Choose Tessella?**

* Our background means that we already understand the project and its issues, which reduces the risks to you. We have successfully worked on the Mantid development from inception, and have had an enormously positive impact on the project.
* We will manage the ISIS development by implementing proven Quality Management practices which will ensure that the Mantid project is a success.
* Our staff all come from scientific backgrounds, meaning that as we add more staff to the team, you will get people who already appreciate the challenges of working in a fast moving, scientific environment.
* We have a proven background in supporting clients with similar needs to STFC (for example, we have had staff working at the UKAEA JET facility for over 20 years)

**What Will STFC Get?**

STFC will benefit from staff who share your background, with the detailed knowledge of writing high quality scientific software. By using Tessella staff, you will ensure that the Mantid software is robust and maintainable, and supported by outstanding expertise.

## Milestones

Key milestones are:

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Key Milestone | Date | Comment |
| 1 | Contract start | 01-Jan-2013 | Start date of contract and staff assignment to project. |
| 2 | Delivery of Mantid release 2.4 | 01-feb-2013 |  |
|  | Further Mantid Releases on a quarterly basis | Every 3 months |  |

## High-level Risks

This is a long term project with a development team split across multiple facilities. By far the largest risks are communication risks between the various stakeholders, primarily:

* Between the geographically distributed development teams
* Between the development team and the instrument scientists
* Between the development team and the end users of Mantid (visiting scientists), this is often an indirect communication path, and has historically been overlooked.
* Between the Senior Management of the various facilities, this is needed to ensure commitment to shared goals and the project vision.

## Stakeholders

The stakeholder plan is detailed in the stakeholder Map [StkMap].

# Project Management Plan

## Resource Plan

### Tessella Project Team Staff

|  |  |  |  |
| --- | --- | --- | --- |
| Role | Name | When needed | Applicable Skills |
| Project manager | N. Draper | Throughout | PM |
| UK Dev Team leader | M. Gigg | Throughout | C++ Development, Git, Jenkins, Python |
| Project architect | N. Draper | With new developments | C++ Architecture, design patterns, web services, architectural best practice |
| Test leader | O. Arnold |  | CxxUnit, Python Unit Testing, Jenkins |
| Build manager | M. Gigg |  | Jenkins, CMake |
| Developer | R. Tolchenov | Throughout | C++ Development, Git, Jenkins, Python |
| Developer | O. Arnold | Throughout | C++ Development, Git, Jenkins, Python |

### Skills required

The Mantid project is primarily C++ with a python interface. Therefore the primary skills are C++ and Python, however there are also advanced graphical interfaces using Paraview, VTK and OpenGL. Data Persistence is primarily to files using a form of HDF called Nexus files. The code is cross platform and developers work on a range of operating systems from Windows 7 through RHE5 and Ubuntu through to Mac OsX.

The project uses Git and Github for distributed version control, and CMake and Jenkins for build control.

The current skills of team members are recorded in the Tessella master [Skills Matrix](http://indexer1/train/Shared%20Documents/skills/skills.xls).

### Skills development plan

The project team has the necessary skills and experience to satisfy the requirements of the project.

The PM will ensure adequate mentoring and support is provided and will raise any concerns with progress with their LM.

#### Team Location

Staff will be based at the customer site at RAL for the duration of the project. Occasional visits to other facilities may be required.

#### Expenses

Expenses cannot be claimed for this project for normal visits to RAL, however if requested to travel to other client sites then travel expenses can be reclaimed.

### Other Tessella Stakeholders

|  |  |  |
| --- | --- | --- |
| Role | Name | Notes |
| Tessella Project Management Board (PMB)  (see [[Q3PROJ60](http://indexer1/quality/qm/Project%20Management/Q3PROJ60.pdf#zoom=100&pagemode=bookmarks)]) |  | A PMB is not required for this project as Nigel Chown is a member of the client PMB for this project |
| Client Project Management Board | N. Chown | Nigel Chown is a member of the client project management board |

## Project Monitoring and Control

### Allocation of tasks

The PM will create manage the project backlog of tasks. The Project Manager will allocate tasks to staff as appropriate.

### Project Monitoring

The project plan will be updated on a monthly basis by the Project Manager using team members’ timesheets. It will be used to monitor tasks, costs and timescales according to the procedures defined in [[Q2PROJ20](http://indexer1/quality/qm/Project%20Management/Q2PROJ20.pdf#zoom=100&pagemode=bookmarks)] and guidelines given in [[Q3PROJ50](http://indexer1/quality/qm/Project%20Management/Q3PROJ50.pdf#zoom=100&pagemode=bookmarks)]. These Project Monitoring details will be stored in NPD/7567/PC/PM.

### Change management

Any change to project objectives (cost, schedule, scope, quality, risk, resource) will follow the process defined in the contract. Where this cannot be done within existing contractual scope changes will be handled according to [[Q2PROJ40](http://indexer1/quality/qm/Project%20Management/Q2PROJ40.pdf#zoom=100&pagemode=bookmarks)] and the “Delegated Authority” levels as defined in [[Q2ADMN02](http://indexer1/quality/qm/Admin%20and%20Finance/Q2ADMN02.pdf#zoom=100&pagemode=bookmarks)].

### Project Logs

All Tessella staff will maintain notes of progress on tasks as part of the task ticket in the TRAC database. Lessons learned will be stored within the project Wiki. Project logs will not be stored at Tessella.

### Project Issues Log

The Project Manager will maintain a log of significant issues / lessons learnt that arise on the project.

This will be kept within the project TRAC database (<http://trac.mantidproject.org/mantid> ) during the project and will remain the property of the client when the project is complete.

## Communication Plan

The stakeholder plan is detailed in the stakeholder Map [StkMap].

## Risk Management Plan

Risks will be managed according to the process defined in [[Q2PROJ36](http://indexer1/quality/qm/Project%20Management/Q2PROJ36.pdf#zoom=100&pagemode=bookmarks)].

A Risk Register will be maintained by the Project Manager and stored in the project github repository. It will be reviewed on a regular basis with the client based PMB.

## Configuration Management Plan

### Configuration Management

Project configuration management will follow the process defined in [[Q2CNFG05](http://indexer1/quality/qm/Configuration%20Management/Q2CNFG05.pdf#zoom=100&pagemode=bookmarks)] and project specific details given below:

* All source code will be maintained in a github repository located <https://github.com/mantidproject> .
* Each release to the users will be tagged with a unique version number.
* For each release of the software to the client a baseline copy will be frozen and stored in a release directory on the download server. The version number will be clearly indicated (e.g. by including it in the file or directory name). Old versions will be moved into an archive directory.
* All issues and requests for change will be filed in the project trac database (<http://trac.mantidproject.org/mantid>). The PM is responsible for agreeing changes to be made and assigning tasks.
* All members of the project team members will have authority to change configuration items held on the projects.
* The following documents will be placed under document control:

**Document Reference**

Project Description NPD/7567/CD/PD

Quality Plan NPD/7567/PC/QP

All members of the Project team will be notified of any changes to these documents.

### Backups

The Mantid code and documents are stored in a github repository located <https://github.com/mantidproject> that is backed up by Github, but also local copies are maintained on our build servers at all participating facilities.

While in preparation, documentation will be stored in project or user folders on the user PCs and synchronised every 1 to 2 days. There may be periods when this frequency cannot be achieved for technical or location reasons, and users must make additional effort to protect from loss of work in these periods.

## Documentation Standards

All Tessella documentation created by this project will use the standard Tessella format (available from the Tessella templates) and follow the Document Control process defined in [[Q2DOC\_02](http://indexer1/quality/qm/Documentation/Q2DOC_02.pdf#zoom=100&pagemode=bookmarks)].

Documents will be filed in GitHub, and contractual documentation will also be stored in NPD as defined in process defined in [[Q2PROJ30](http://indexer1/quality/qm/Project%20Management/Q2PROJ30.pdf#zoom=100&pagemode=bookmarks)].

## Review Policy

Reviews will be conducted according to the process defined in [[Q2PROJ35](http://indexer1/quality/qm/Project%20Management/Q2PROJ35.pdf#zoom=100&pagemode=bookmarks)]. The following reviews will be carried out:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type | Documents | When | Reviewed by | Review Method |
| Quality Documents | Quality Plan,  Configuration Plan | Within 2 weeks of project start-up  + when changes are made. | Project Manager & Quality Team | NPD Workflow |
|  | Baseline Project Plan / Schedule | Within 2 weeks of project start-up | Project Manager &  Line Manager or Team Leader | NPD Workflow |
| Technical Documents | Requirements Documents |  | Project Manager, Business/Requirements Analyst & Client | Review by email / signed paper documents |
|  | Design Documents |  | Project Architect & Project team | Review by email |
|  | System User Guides,  System Maintenance Guide |  | Project Manager, Team Leader & Client | Review by email / signed paper documents |
| Testing Documents | Test plans and scripts |  | Project Manager, Test Leader & Project team | Review by email |
|  | Acceptance Test Scripts |  | Project Manager, Test Leader & Client | Review by email |
| Prototypes | User Interface |  | Project Manager, Team Leader & Client | Inspection |
| Code | Code written | Any core functionality changes | Team Leader or other suitably qualified developer | Inspection and approval. Occasionally code review presentations |

## Legal and Regulatory Issues

### Security

This project is an open source project conducted in the public domain; non-sensitive documents will be available by the public Mantid project repository on GitHub. Sensitive or private data or documents are subject to a non-disclosure agreement between Tessella and the client. Only members of the project team, who have agreed to the terms of the NDA, will have access to files held in NPD or the projects directory.

Computer files will be subject to the security guidelines defined in [[Q3IITS60](http://indexer1/quality/qm/Internal%20IT%20Systems/Q3IITS60.pdf#zoom=100&pagemode=bookmarks)].

The majority of this project will be performed at the client site, and with client supplied hardware and software. Where Tessella systems are concerned IT Security will conform to the general Tessella policy [[Q1IITS01](http://indexer1/quality/qm/Internal%20IT%20Systems/Q1IITS01.pdf)]. No exceptions are necessary.

### Business Continuity

Business continuity issues are addressed in Tessella’s Business Continuity policy [[Q1BCM\_01](http://indexer1/quality/qm/Business%20Continuity/Q1BCM_01.pdf#zoom=100&pagemode=bookmarks)]. There are no additional issues specific to this project.

### Environmental Issues

When working at Tessella sites staff are expected to follow the environmental awareness guidelines detailed in [[QFSTAF52](http://indexer1/quality/qm/Staff%20Manual/QFSTAF52.pdf#zoom=100&pagemode=bookmarks)]. When working at Client sites, Tessella staff will be expected to conform to the client’s environmental policies.

### Health & Safety

When working at Tessella sites staff are expected to follow the Health & Safety guidelines detailed in [[Q2STAF07](http://indexer1/quality/qm/Staff%20Manual/Q2STAF07.pdf#zoom=100&pagemode=bookmarks)]. When working at Client sites, Tessella staff will be expected to conform to the client’s Health & Safety procedures.

### Product Liability and Safety

The limit of liability within the agreed contractual terms between Tessella and SoftCat are limited to 125% of the contract value. However the software is related to scientific data analysis and does not directly relate to any safety-critical systems.

### Bribery and corruption

The risk of bribery is considered to be low; no additional precautions are required.

## Project Procurement Plan

### Subcontractors

No part of this project will be sub-contracted to a third party.

### Purchasing

No purchasing is required on behalf of this project, as Tessella already owns all the material required.

### Client Supplied Goods

Client supplied goods will be managed according to process defined in the [[Q2CNFG30](http://indexer1/quality/qm/Configuration%20Management/Q2CNFG30.pdf#zoom=100&pagemode=bookmarks)].

# Project Execution - Software Projects

## Project Life Cycle

This project will follow the Agile lifecycle as defined in [Q2SDEV18](http://indexer1/quality/qm/System%20Development/Q2SDEV18.pdf#zoom=100&pagemode=bookmarks).

The project works on 3 month iterations each resulting in a release of the developed software.

The System development will follow the Tessella Agile Development procedures with the following exceptions:

* Daily scrum meetings will be held as text meetings via Skype.
* The project manager will assume the responsibilities of the Product owner in addition to those of the scrum master. These will be directed using the output of the Scientific Steering Committee meetings.
* Sprints or iterations will be roughly 3 months in duration; this will be adjusted slightly to fit in with facility running schedules.
* The final week of an iteration will be devoted to testing and release procedures.
* The Sprint backlog and product backlog will be maintained in the TRAC issue database.
* Sprints or iterations will continue unless the project is halted by the project management board.

## Baseline Project Plan

The baseline project plan is stored in NPD/7567/PC/PP.

## Quality Processes

All staff on the project, both Tessella and client based will work to the agreed Mantid project quality guidelines. Where specific guidelines are not available Tessella staff will follow the processes embodied in the QMS and specified in this QP.

### Coding Standards

Coding shall follow the standards defined in <http://www.mantidproject.org/Coding_Standards>.

### Prototyping

Prototypes may be created to trial new functionality, but only after discussion and agreement of the Project Manager.

### Usability

The following User Centred Design (UCD) techniques will be used to identify and eliminate usability defects early in the project lifecycle:

* Storyboarding to capture requirements from the perspective of the user interface.
* Incremental Design of the User Interface using Paper-prototyping and Usability Testing through naïve-user cognitive-walkthroughs.
* Informal usability testing as part of development testing.

The output from these activities will not form part of the formal delivery.

## Test Plan

Testing will be carried out according to the test plan [TestPlan].

## Project Completion

This is a customer managed time and materials project, as such project completion will be considered to be when the agreed budget has been exhausted.

It will be formally closed (complete /dead) within Tessella once the final invoices have been paid and the project closedown activities (see section 3.5.3 ) have been completed.

### Handover

On completion of the project the access details of all project repositories will be handed over to the client.

### Archiving

On completion of the project all final source code will be left in the GitHub repository and all access details handed over to the client SO.

### Project Closedown

This will follow the process defined in “Project Closedown” [[Q2PROJ25](http://indexer1/quality/qm/Project%20Management/Q2PROJ25.pdf#zoom=100&pagemode=bookmarks)].

1. Coding Standards

Code development will be consistent with Mantid project standards dictated by the project team. Details of the standards are stored <http://www.mantidproject.org/Coding_Standards>.

* 1. Code Headers and Naming Conventions

Code headers and naming conventions are detailed on the project website: <http://www.mantidproject.org/Coding_Standards>.

* 1. Copyright Information

All deliverable code created during this project will have the following copyright information:

*Copyright &copy; <year> ISIS Rutherford Appleton Laboratory & NScD Oak Ridge National Laboratory*.

Where <year> indicates the date on which a particular piece of code or documentation is written.

* 1. Use of Logos

Graphical User Interfaces forming part of the delivered system will prominently display the Tessella and all participating facilities Logos.

The logo will be displayed on:

* Start-up/splash screen of the application.
* Help-About screen or equivalent.